

What Is Claimed Is:

- 1057530-012562
1. An airborne particle impaction sampler, comprising:  
a base;  
5 a microscope slide disposed on said base;  
an adhesive media located on said microscope slide to assist in  
adhering airborne particles on said microscope slide;  
a top cap secured to said base, said top cap having an inlet  
opening formed therethrough;  
10 said inlet opening having an outer venturi section and an inner  
laminar section such that air entering the sampler impacts said adhesive media.
  2. The sampler of claim 1, wherein said inlet opening has a  
pair of generally straight opposing side portion and a pair of arcuate end  
portions.
  - 15 3. The sampler of claim 2, wherein said venturi section has  
a pair of oval sides that extend generally inward from a respective one of said  
arcuate end portions.
  4. The sampler of claim 3, wherein said venturi section has  
a pair of opposing side surfaces that converge towards one another.
  - 20 5. The sampler of claim 1, wherein said top cap  
telescopically fits over said base.
  6. The sampler of claim 1, wherein said base has a groove  
formed in its outer surface and an o-ring disposed in said groove to prevent air  
from leaking into said sampler when said top cap is secured to said base.
  - 25 7. The sampler of claim 1, further comprising:  
a vacuum source attached to the sampler for drawing air therein.

8. A method of gathering airborne particles in a slit impaction sampler, comprising:

- providing a microscope slide;
- preparing said microscope slide with an adhesive media;
- 5 loading said slide into a base portion of the sampler;
- assembling a top portion of the sampler to said base portion;
- connecting a vacuum source to an outlet opening of the sampler;
- drawing air into an inlet opening formed in said top portion of the sampler;
- 10 accelerating air after it enters said inlet opening; and
- directing the air such that it impacts said adhesive media in a generally perpendicular direction.

9. The method of claim 8, wherein said adhesive media is applied to a middle two-thirds portion of said microscope slide.

- 15 10. The method of claim 8, further comprising:  
precalibrating said vacuum source.

11. The method of claim 10, further comprising:  
calibrating said vacuum source on-line during the gathering of airborne particles.

- 20 12. A slit impaction air sampling device, comprising:  
a base portion having a recess formed in a top surface of said base portion, said recess being sized to receive a microscope slide;  
a microscope slide disposed in said recess;  
a depression formed in said top surface of said base portion, said  
25 depression having a depth that is larger than a depth of said recess, said depression being sized to allow air flow around said microscope slide;  
an outlet passage in communication with said depression at one end and a vacuum source at another end;  
a top cap secured to said base; and

a venturi inlet formed in said top cap.

13. The device of claim 12, further comprising an adhesive media applied to said slide.

14. The device of claim 13, wherein said adhesive media is applied  
5 to a middle two-thirds portion of said microscope slide.

15. The device of claim 12, wherein said venturi inlet includes a tapered portion and a laminar portion, with said laminar portion being located adjacent said microscope slide.

16. The device of claim 15, wherein said tapered portion includes a  
10 pair of opposing converging slide surfaces that are connected by a respective arcuate portion.

17. The device of claim 16, wherein said laminar portion includes a pair of generally planar opposing side surfaces that extend from a respective one of said converging side surfaces.

18. The device of claim 16, wherein said top cap telescopically fits  
15 over said base.

19. The device of claim 12, wherein said base has a groove formed in an outer surface for receipt of an o-ring therein to prevent air from leaking into the device when said top cap is secured to said base portion.